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A Study on Efficiency and Financing Fixed Assets with Special Reference to Ambuja Cements and Birla Cements

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Abstract

Optimum utilization of fixed assets is not done in all industries. Many companies do not measure the efficiency of fixed assets. This study focuses on adequate cash flow for financing fixed assets, efficiency of fixed assets in relation to the investments made in cement industries. Ambuja Cements and Birla Cements are used for the study.

Introduction

The decision to be made in regard to investment in fixed assets is a critical area. As investment in fixed assets involves capital expenditure and the returns are spread throughout the life of the asset, the management will not be in a proper position to choose a best investment. Fixed assets form the major part of assets. As they are the main source of production, wise decisions has to be taken. The optimal utilization of fixed assets i.e., the efficiency of fixed assets has to be measured periodically. The major problem faced by the management is to determine whether to invest in fixed assets where in the investment is locked up for a long period. They are the basic source of income to a company.

Fixed assets represent tangible as well as intangible assets while the former represent assets like land& building, Plant & Machinery, furniture & fixtures, the latter group consists of copyrights patents and goodwill. The assets are replaced when either utility is exhausted or they become obsolete or uneconomical. Intangible fixed assets are the assets which cannot be seen or felt, having no physical existence in themselves, rather they have right to enjoy some privileges. The amount invested in these assets not are realized at once from the total sales during an accounting year the cost of fixed assets will recover in the form of depreciation, which is usually charged as an expense against the revenues generated using these assets in Production Process.

These assets realized gradually from every unit of sale made during the serviceable life of the assets a great deal of attention must be given to and involve the long-term financial commitment. A systematic blending of current and fixed assets into profitable combination is a challenging task for the financial management. The analysis of fixed assets is very important from the investor's point of view, because they are more concerned with long-term assets.

Need for the Analysis

In general researches have been undertaken for measuring the financial performance of a company or to learn the financial viability of a firm. But, study with focus to the efficiency of fixed assets is very less. So, this study is done to know the extent of utilization of fixed assets and its performance in Ambuja Cements and Birla cements.

Objectives of the Study

- Study the efficiency of fixed assets utilization
- Relationship between fixed assets and sales

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- Influence of utilization of fixed assets on operating profit

Scope of the Study

The study focuses in measuring the efficiency of fixed assets and the impact of extent of utilization of fixed assets on sales and operating profits of Ambuja cements and Birla cements.

Period of the Study

Ten years from 2001-2002 to 2010-2011 is been taken for the study.

Data Collection

Secondary data is used for the study. The annual reports are used.

Tools of Analysis

Tools used for analysis are ratio analysis, trend analysis, common size analysis and coefficient of correlation.

Limitation of the Study

This study is confined to Ambuja cements and Birla cements. As the study focuses on efficiency of fixed assets, the result cannot be generalized as the financial position of the firm. And the result arrived is only for the ten years period is., 2001-2002 to 2011-2012.

Analysis of the Data

Ratios like fixed assets to net worth, fixed assets to long term funds, fixed assets turnover ratio, indices of fixed assets gross block, sales and operating profit margin is used to analyze the data.

Financing Pattern of Fixed Assets

Fixed assets have to be primarily financed by the proprietors of the enterprise. The funds provided by the owner's should be sufficient not only to the finance and also the entire amount of fixed assets required and also the currents assets are permanent in nature. If the owner's funds are not sufficient for other long-term may be used to finance fixed assets. So it is clear that short term funds in every circumstance should be avoided to finance the fixed assets. In order to study the financing pattern of fixed assets in sample industry two relevant ratios viz., fixed assets to net worth and fixed assets to long term funds have been computed.

Fixed Assets to Networth

It is one of the main solvency ratios. It is used to measure the company's long term solvency position. This ratio gives a signal when a large amount of capital is locked up in fixed assets as it has a direct impact on availability of funds for working capital. It is the relationship between fixed assets and owner's funds or it may also be said that it is the indicator which shows the owner's funds clearly to the shareholders. So, equity shareholders will be interested to know the result of this ratio.

The rule of thumb for this ratio is 0.75 times, which means that the amount invested in fixed assets should not exceed 75% of owner's funds. When there is a rise in the ratio, it indicates a weaker position.

$$\text{Fixed assets to net worth ratio} = \frac{\text{Fixed assets}}{\text{Net worth}}$$

The purpose behind this ratio is that 75% of the owners fund can be used to finance the fixed assets, so that the balance can be used to finance the current assets.

The fixed assets net worth ratio of Ambuja cement industry Ltd is calculated in the following table.

Table I shows that ratio is more than 1, which is not a good signal. This implies that the owner's funds are not sufficient to finance the fixed assets. Therefore company has gone for outside sources which have resulted in credit. The result also shows that there is a hike throughout the period.

The average mean of fixed assets to net worth was 1.64 during the study period. The average ratio is also above the standard of 1:1 during the study period the main analysis of this analysis is that no margin of safety for long-term creditors since funds provided by the owner not sufficient to finance fixed assets as well as part of working capital requirements.

Table II shows the fixed assets to net worth of Birla cement limited.

Table II shows that the fixed assets to net worth ratio of Birla cement industries Ltd., from 2001-02 to 2004-2005 which was 2.56 to 2.93. It was highest during the year2004-05.from 2005-06 to 2010-11 which was decreasing from 2.19 to 1.79. It indicates that the Birla cement industries Ltd. It uses more borrowed funds to its investment the owners' equity from 2005-06 to 2010-11, before that, it was seen that there was as increase of owner's equity for its investment. The mean ratio of fixed assets to net worth of Birla cement Ltd. was 2.35. The main implications of the above analysis are that there is margin of safety and protection of creditors of the Birla cement industries limited.

Fixed Assets to Long-term Funds

This is one of the important ratios which show the relationship between fixed assets and finance to those assets. By long term funds, we mean both net worth and long term debt. Since shareholders funds will not be always sufficient to finance the fixed assets, the company goes with the next alternative of credit. When a company has enough amounts of shareholders funds to finance its fixed assets and current assets, the company is said to financially sound. But due to the changing technologies and competition, the company will be in a position to invest more than the funds available. Since the fixed assets which has a long period of life expectancy, has to financed through long term funds, both net worth and long term debt is used to finance fixed assets.

Therefore this ratio indicates that there are adequate long term funds to finance fixed assets. As a part of long term funds will be utilized for working capital or to finance the current assets, this ratio has a great impact. On a narrow approach it can be said that the ratio should be 0.75 times or even if it is 1:1, it indicates that the company has utilized long term funds properly or it may also be said that the company has enough amount of long-term funds to finance its fixed assets.

The ratio is calculated as follows:

$$\text{Fixed assets to Long-term Funds ratio} = \frac{\text{Fixed assets}}{\text{Long-term Funds}}$$

If the ratio is less than one, it implies that long-term funds are enough to fixed assets as well as a part of its working capital requirements. Conversely, if the ratio is more than one, it is an indication that long-term funds are inadequate to finance the entire fixed assets and short-term creditors finance the remaining fixed assets. Generally the ratio of 0.75:1 is ideal.

The fixed asset to long-term fund ratio of Ambuja cement is calculated in table III.

The higher ratio indicates the safer the funds available in case of liquidation. It also indicates the proportion of long-term funds that invested in working capital. This ratio varied from 0.78 to 1.10.

The highest ratio was in the year 2010-11 and the lowest ratio was in the year 2002-03 and 2008-09. The mean ratio of fixed assets to long-term funds was 0.94 during the study period. The main use of the above study is the long-term funds have been adequate to finance the fixed assets requirements of the concern.

The data regarding fixed assets to long-term fund of Birla cement industries ltd presented in table IV.

Table IV shows that the proportion of long-term funds used in fixed assets. The higher the ratio indicates the safer the funds available in case of liquidation. It also indicates the proportion of long-term funds that invested in working capital. This ratio varied from 1.06 to 1.50 during the study period. From 2001-02 it was increasing and decreasing randomly. The mean ratio was 1.25 during the study period. The main use of the long-term funds is more adequate of finance the fixed assets requirements of the concern and the excess of long-term funds over fixed assets investments used for the working capital requirements.

Testing the Significance of Correlation Coefficient:

Based on the above analysis the researcher framed the following null hypothesis.

Null Hypothesis (Ho):

Ho (1): there is no significant relationship between fixed assets (net) and long-term fund during 2001-02 to 2010-11.

The testing of significance coefficient of fixed assets to long –term funds of Ambuja cement industries ltd and Birla cement industries Ltd shows in table V.

Table V shows that the ratio of net fixed assets to long-term funds of the cement industries. The average ratio depicts that the long-term funds were sufficient to finance fixed assets as the ratio worked out, on an average at 0.94 times of Ambuja cement industries Ltd and 1.25 times of Birla cement industries Ltd. It also reflects that even after meeting the fixed assets requirements completely, both the industry was able to provide long-term funds to finance the net working capital.

The analysis says that both the companies has adequate amount of long tern funds to finance their fixed assets. As their average ratio is high it indicates that they also use apart of long term funds to finance their current assets.

Efficiency of Fixed Assets

Efficiency of fixed assets has be measured periodically. As investment in fixed assets is expected to result in the volume of sales, the efficiency of fixed assets becomes important. Efficiency ratios which measure the relationship between sales and fixed assets, profit and fixed assets, return on investment made in fixed assets are to be measured.

$$\text{Fixed assets turnover ratio} = \frac{\text{Sales}}{\text{Fixed Assets}}$$

The standard norm of this ratio is 5 times. If the ratio is high it indicates high efficiency and if the ratio is low it indicates, low utilization of fixed assets. So, this ratio helps the company to identify whether the fixed assets are utilized at the maximum.

Table VI shows that the fixed assets turnover ratio of Ambuja cement industries Ltd. Ratio shows the trend from 0.55 to 1.54 during the study period, which depicts the down ward to upward and then again down ward trend. It was the highest in the year 2005-06, which was 1.54 and the lowest in the year 2001-02, which was 0.55. The average mean of the fixed assets turnover ratio was 0.92 during the study period. It reveals that there is a very low fixed assets turnover ratio as against the standard norm of 5:1.

Table VII shows the fixed assets turnover ratio of Birla cement industries Ltd., was below the standard norm of 4.5 to 5 times. This ratio reveals the value between 1.06 to 1.50 during the study period. It shows the lower upward trend. The highest value in the year 2009-10 which was 1.50 and the lowest in the year 2002-03 which was 1.06. It clearly indicates better performance of utilization of fixed assets the average ratio was 1.25 during the study period. It is also shows that there is very low fixed asset turnover ratio against the standard norm of 5:1.

Effect of Operating Profit in Relation with Fixed Assets and Turnover

The value of fixed assets has a great impact on operating profits. The increase in fixed assets must result in an increase in sales and result in increase in profits. If the trends of gross block and sales are increasing, it can be said that expansion of gross block is due to increase in sales, or sales has justified the need for expansion of fixed assets (gross).

When there is a decline in sales, it results in underutilization of fixed assets. This shows that excessive investment in made in fixed assets. On the other hand, if the sales growth rate is higher than that the rate of growth of gross block, it can be said that there is better utilization of gross block expansion. The increasing trend in operating profit along with the increase in gross block and sales indicates better operating efficiency and states that more profitable. In order to study the trends in gross block and sales, indices for these variables have computed considering as the base year.

Trend analysis is been used to study the relation between fixed assets and turnover. 2001-2002 is taken as the base year and the indices are calculated. In order to study the trends in gross block and sales, indices for these variables have computed considering as the base year. Table depicts these trends along with operating profit margin for the study period.

The increase in fixed assets has not resulted in increase in sales consistently. According to the results of Ambuja cements Ltd., there is no uniformity in operating profits. Initially there was a decline and from 2004-2005 there is an increase and then from 2007-08 the operating profits has a decline trend.

This is not a positive result. Thus, investment in fixed assets is not utilized effectively which has resulted in decline in profits. Table VIII

In Birla cement Ltd's trend, resemble with the combined positions of sample units. Birla cement Ltd recorded higher rate of growth in sales as compared to gross block. It implies that proper use of fixed assets has triggered more sales. The operating profit margin registered inconsistently, but shown increasing trend in both the units over the study period.

Fixed Assets and Depreciation

According to the legal constraints each and every company has to provide a part of its profit for depreciation. Depreciation can be calculated by following a number of methods. The most popular method is the straight line method, where the depreciation is calculated on historical costs. Depreciation is provided to make the replacement of assets convenient. Trend analysis is followed to check the adequacy of depreciation. If the indices of both fixed assets and depreciation show an upward trend, it may be inferred that the company has provided enough depreciation and reverse is a negative signal. For this purpose, 2001-2002 is taken as the base year and the indices of fixed assets and depreciation are calculated.

Table IX shows that indices of fixed assets gross block, sales and operating profit margin of Ambuja and Birla cement industries limited during the study period.

Table IX depicts that the increase in fixed assets and increase in provision for depreciation follows an upward trend, which says that Ambuja Cements Ltd has provided adequate provision for depreciation. So, the company will not have any inconvenience while replacement of assets. But in Birla Cements from the year 2004-2005 the provision for depreciation is very less than the value of fixed assets, which not a positive sign.

Conclusion

The above study reveals that both Ambuja Cements and Birla cements has adequate long term funds to finance fixed assets. Net worth of both the companies does not provide adequate funds for working capital. The indices of fixed assets and depreciation shows an upward trend, which means that the company has provided adequate provision for replacement of assets. The company should improve the efficiency of fixed assets, so that idle funds invested in fixed assets can be reduced. Steps should be taken to utilize the fixed assets optimally. In future, the companies will be in need of modernization, for which the companies should create sources which will be adequate to meet these needs.

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Table I : Fixed Assets to Net Worth of Ambuja Cement Ltd. (Rs. in Crore)

YEAR	FIXED ASSETS	NET WORTH	RATIO(IN TIMES)
2001-02	2855	2008	1.42
2002-03	2958	1946	1.52
2003-04	3658	2374	1.54
2004-05	3709	2245	1.65
2005-06	4543	2489	1.82
2006-07	5231	2960	1.76
2007-08	5707	3193	1.78
2008-09	6224	3440	1.80
2009-10	8779	5628	1.55
2010-11	9702	6186	1.56
AVERAGE			**1.64**
Source: computed from annual reports of Ambuja cement ltd., from 2001-2002 to 2010-2011.			

Table II : Fixed Assets to Net Worth of Birla Cement Ltd. (Rs. in Crore)

YEAR	FIXED ASSETS	NET WORTH	RATIO (IN TIMES)
2001-02	8573	3336	2.56
2002-03	8837	3296	2.68
2003-04	8995	3220	2.79
2004-05	8762	2982	2.93
2005-06	10981	5002	2.19
2006-07	11544	5191	2.22
2007-08	11734	5008	2.34
2008-09	13542	6600	2.05
2009-10	14300	6987	2.04
2010-11	17513	9754	1.79
AVERAGE			**2.35**
Source: computed from annual reports of Birla cement ltd., from 2001-02 to 2010-11.			

Table III : Fixed Asset to Long-term fund Ratio of Ambuja Cement is Calculated

YEAR	FIXED ASSETS	LONG-TERM FUNDS	RATIO(IN TIMES)
2001-02	2855	3629	0.78
2002-03	2958	3673	0.80
2003-04	3658	3662	0.99
2004-05	3709	3687	1.0
2005-06	4543	4741	0.95
2006-07	5231	5370	0.97
2007-08	5707	6342	0.89
2008-09	6224	7122	0.87
2009-10	8779	7926	1.10
2010-11	9702	8762	1.10
AVERAGE			**0.94**
Source: computed from annual reports of Ambuja cement industries ltd., from 2001-02 to 2010-11.			

Table IV : Fixed Assets to Long-term Funds of Birla Cement Ltd. (Rs. in Crore)

YEAR	FIXED ASSETS	LONG-TERM FUNDS	RATIO(IN TIMES)
2001-02	8573	4726	1.11
2002-03	8837	4694	1.06
2003-04	8995	4325	1.15
2004-05	8762	5185	1.29
2005-06	10981	7184	1.10
2006-07	11544	10231	1.35
2007-08	11734	13434	1.46
2008-09	13542	16414	1.32
2009-10	14300	25800	1.50
2010-11	17513	31862	1.21
AVERAGE			**1.25**
Source: computed from annual reports of Birla cement industries limited. from 2001-02 to 2010-11			

Table V : Fixed Assets to Long-term funds Ratios of Ambuja and Birla Cement Industries Ltd. (In Times)

YEAR	AMBUJA CEMENT	BIRLA CEMENT
2001-02	0.78	1.11
2002-03	0.80	1.06
2003-04	0.99	1.15
2004-05	1.0	1.29
2005-06	0.95	1.10
2006-07	0.97	1.35
2007-08	0.89	1.46
2008-09	0.87	1.32
2009-10	1.10	1.50
2010-11	1.10	1.21
AVERAGE	**0.94**	**1.25**
Co-efficient of correlation between fixed assets (net) and long-term funds	**0.429**	**0.407**
Source: Computed from annual reports of Ambuja cement and Birla cement industries limited. From 2001-02 to 2010-11.		

Table VI : Fixed Assets Turnover Ratio of Ambuja Cement Industries Ltd. (Rs. In Crore)

YEAR	SALES	FIXED ASSETS	RATIO(IN TIMES)
2001-02	1583	2855	0.55
2002-03	2025	2958	0.68
2003-04	2305	3658	0.63
2004-05	3026	3709	0.81
2005-06	7010	4543	1.54
2006-07	5631	5231	1.07
2007-08	6220	5707	1.08
2008-09	7077	6224	1.13
2009-10	7390	8779	0.84
2010-11	8515	9702	0.87
AVERAGE			**0.92**
Source: computed from the annual reports of Ambuja cement industries Ltd., from 2001-02 to 2010-11.			

Table VII : Fixed Assets Turnover Ratio of Birla Cement Industries Ltd. (Rs. In Crore)

YEAR	SALES	FIXED ASSETS	RATIO(IN TIMES)
2001-02	8573	8573	1.11
2002-03	8837	8837	1.06
2003-04	8995	8995	1.15
2004-05	8762	8762	1.29
2005-06	12155	10981	1.10
2006-07	15669	11544	1.35
2007-08	17278	11734	1.46
2008-09	17907	13542	1.32
2009-10	21570	14300	1.50
2010-11	21274	17513	1.21
AVERAGE			**1.25**

Source: computed from the annual reports of Birla cement industries Ltd., from 2001-02 to 2010-11.

Table VIII : Indices of Fixed Assets Gross Block, Sales and Operating Profit Margin of Ambuja Cement and Birla Cement (Base Year 2001-02 = 100) (In Percentage)

YEAR	Ambuja cements Ltd			Birla cements Ltd.		
	FA	SALES	O.P MARGIN	FA	SALES	O.P MARGIN
2001-02	100	100	32.79	100	100	5.70
2002-03	104	128	27.60	103	100	5.21
2003-04	128	146	27.92	105	104	6.70
2004-05	130	191	28.12	114	119	11.26
2005-06	159	442	34.71	131	128	14.72
2006-07	183	356	36.20	135	160	31.51
2007-08	200	393	28.85	151	178	33.38
2008-09	218	447	27.07	167	181	24.71
2009-10	307	467	25.19	204	212	33.31
2010-11	400	538	22.92	260	215	20.88

Source: Computed from annual reports of Ambuja cements and Birla cements Ltd from 2001-02 to 2010-11.

Table IX : Indices of Fixed Assets Gross Block, Sales and Operating Profit margin of Ambuja and Birla Cement Industries Limited during the Study Period

YEAR	Ambuja Cements Ltd		Birla Cements Ltd	
	Gross block	Depreciation	Gross block	Depreciation
2001-02	100	100	100	100
2002-03	104	119	103	106
2003-04	128	151	105	110
2004-05	130	173	114	110
2005-06	159	242	131	114
2006-07	183	268	135	121
2007-08	200	296	151	129
2008-09	218	328	167	132
2009-10	307	372	204	140
2010-11	400	415	260	148